

Technology: Brave New World

by Jay Cross, June 1996



Jay Cross is vice president of Omega Performance, an international bank training firm based in San Francisco. Omega trains bankers to sell.

Geraldine Ferraro, former congresswoman, said, "It was not so long ago that people thought semiconductors were part-time orchestra leaders and microchips were very, very small snack foods."

Like it or not, you and your customers are boarding a bullet train to a future where clocks run ten times faster. Your kids are going to play in virtual environments and wear watches more powerful than today's super computers. But long before then, the digital revolution will forever change your relationship with your customers.

How fast are things changing?

Consider computers. If cars gained in price/performance at the rate of computers, for a nickel you could buy a Rolls Royce that could go Mach 2. The latest Pentium chip is a thousand times faster than the chip in the original IBM PC. Nintendo is coming out with a computerized video game that will cost \$250 for the same amount of computing power that cost \$14 million only 10 years ago and \$20,000 last year.

Consider CD-ROMs. Four years ago there were no encyclopedias on CD-ROM. Now they outsell printed encyclopedias by a wide margin. Two years ago a recordable CD-ROM drive, known as a CD-R, cost \$12,000. Last year the price dropped to between \$4,000 and \$6,000. Hewlett Packard just announced a \$1,000 recordable CD-R drive and the price is expected to come down to \$500 by the end of this year. Soon, every single-person training firm will offer "Multimedia CD-ROM Training."

Consider the World Wide Web. A year ago, one million people surfed the Web. Now eight million people surf the Web and that number is growing at a rate of 15% a month. A year ago a dozen banks had Web sites; now

more than four hundred banks are on the Web. Netscape's Jim Clark pocketed \$1 billion taking a company less than a year old public! Shockwave and Java recently made it possible to play multimedia on the Web. New developments are announced weekly.

Consider bandwidth. Bandwidth? That's how much information you can run down a wire. It's the size of the pipe carrying the flow of information. The cost of bandwidth is dropping like a stone. A couple of years ago it cost \$5 to transmit a megabyte of data. Now it costs a nickel. Last February, Byte magazine reported, "Internet broadcasting is overcoming technical obstacles like the narrow bandwidth of phone lines, the limits of compressing multimedia data, and the vagaries of Internet packet transmission." Some predict connectivity costs will drop exponentially as fiber optics, ATM, cable modems, ISDN and satellite downlinks become commonplace.

In this year's **State of the Union address**, President Clinton said, "Every classroom in America must be connected to the information superhighway, with computers, good software and well-trained teachers. We are working with the telecommunications industry, educators and parents to connect 20% of the classrooms in California by this spring, and every classroom and library in America by the year 2000." This investment will do for communications what NASA did for high-tech.

THE WEB AND THE MARKET

Have you surfed the World Wide Web lately? If not, you should. Paul Saffo, a consultant who heads the Institute of the Future believes "It's business malpractice to ignore what's happening on the Internet today." IBM announced a new service that puts a ticker tape on the top of anyone's PC screen. The Quicken Financial Network cut a deal to process trades through Charles Schwab. Every mutual fund company worth its salt has established an outpost on the Web.

Here are some sites to check out:

- [Schwab](http://www.schwab.com) http://www.schwab.com
- [Fidelity](http://www.fidelity.com) http://www.fidelity.com
- [Merrill Lynch](http://www.ml.com) http://www.ml.com
- [Invesco](http://www.invesco.com) http://www.invesco.com
- [Gabelli](http://www.gabelli.com) http://www.gabelli.com

· [Calvert Group http://www.calvertgroup.com](http://www.calvertgroup.com)

All these sites list today's prices, historic prices, yields, industry statistics, interactive asset allocation models, information requests, prospectus requests and much more.

The *Wall Street Directory* (<http://www.wsdinc.com/cgi-bin/ic217.shtml>) lists more than one hundred sources of mutual fund software and information available on the Web.

The best way to see what's going on with the investment business in cyberspace is to dive in and look around for yourself.

Digital Equipment has a site called [Alta Vista](#) which indexes everything on the World Wide Web and searches for anything you request. Try a search on "mutual fund" or "investment" or "broker." You'll be surprised at how much you find.

RELATIONSHIPS IN THE INFORMATION AGE

For years we've heard that the Information Age was coming. Now it's arrived. From now on, digital technology—computers, the Net, and fiber optics—will do many of the things you're used to doing: provide market information, execute transactions and give advice.

In *The Road Ahead*, Bill Gates foretells of the PC/pager/phone wallet, wired classrooms, voice-controlled computers, and jamming the entire contents of the Library of Congress into a package the size of a copy of your telephone. Reviewers in the tech community fault Gates not for being too far out, but for being too conservative.

That same wallet is going to provide up-to-the-second market information. My electronic wallet will be more than a pocket Quotron. It will know my investment goals and suggest changes to my portfolio. It will teach me things I need to know. It will talk with me—keyboards will be disappearing as voice input becomes the norm. The electronic wallet is going to do a lot of the things you used to do for me.

So just what are you going to do for me in this new wired world?

The Road Ahead describes Gates' futuristic house. When you walk in, you're issued a badge that identifies you to the home computer. As you walk along, lights come on ahead of you and dim behind you; the decentralized music server pumps out your favorite music; flat-screen video panels that line the walls display images you enjoy as you walk by.

The problem is, Gates is stuck in the previous generation with the one person/one computer paradigm. In truth, the Sun motto has it right, "The Network Is the Computer."

Sun's chief technology officer explains, "What will be important is that the network will substitute for all transactions involving humans and distance. There will be a 'no-distance alternative' of the network," because of the bandwidth that will be available.

In the past, you've done most of your work on the phone. In a few years, you'll do most of it over the Net. And it's going to bring you closer to your customers.

- The Net will transform you from a voice on the phone to a picture on the computer screen. Your avatar will be in the room.
- Instead of spending time teaching your customers investment basics, you can leave that job to the computer. This will give you more time to deal with more sophisticated investment decisions.
- With all the information available on the Net, customers will no longer need to call you for that information. Increasingly, you'll be giving advice instead of data.
- You and your customers are going to go through mind-boggling changes in the next two to five years. Change is opportunity.

Customers will need techno-savvy brokers to recommend the right software and sources, to cheer them on, and lead them into the future.

Give a man a fish and he won't go hungry today. Teach a man to fish and he'll never go hungry. In the years ahead, you can expect to become a master-teacher of fishermen.

Where do you start? You dive in. Get on the Web yourself. Purchase a modem. (They cost between \$100 and \$200.) Ask a technically savvy friend how to connect with a good "ISP" (Internet Service Provider) in your area. In the words of Fritz Perls, "Learning is discovering that something is possible."